



Stormwater Management Division

Stormwater Management Advisory Commission

FY2017 Annual Report

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The Stormwater Management Advisory Commission (SMAC), which was formed in April 2004, played an instrumental role in helping to address Raleigh's stormwater management needs over the last year. The Commission's work from July 1, 2016 to June 30, 2017 has been focused on the following areas:

1 – Stormwater Capital Improvement Program

The Commission reviewed and approved the proposed Stormwater Capital Improvement Program (CIP) for fiscal years 2018 - 2022. Much of FY2017 has been dedicated to prioritizing and planning for stormwater infrastructure projects that are in design or under construction.

Here is a list of CIP projects completed during the past year as well as projects that are currently in the design or construction phase.



Lower Longview Lake Dam and Spillway Rehabilitation under construction

<u>Projects Completed</u>	<u>Date Completed</u>	<u>Type of Project</u>	<u>Final Project Cost</u>
Alamance Drive Drainage Improvement	03/2017	Stormwater System Improvement	\$266,355
<i>Total Completed</i>			<i>\$266,355</i>

<u>Projects Under Construction</u>	<u>Estimated Completion</u>	<u>Type of Project</u>	<u>Budgeted Project Cost</u>
Alexander Road and McCarthy Street	01/2018	Stormwater System Replacement	\$150,000
Blenheim Drive Culvert Rehabilitation	10/2017	Culvert Improvement	\$360,000
Brockton Drive Lake Phase I	03/2018	Lake Preservation	\$1,538,615
Crabtree Boulevard Culvert Rehabilitation	10/2017	Culvert Improvement	\$275,000
Lower Longview Lake Dam and Spillway Rehabilitation	06/2018	Lake Preservation	\$3,400,000
Lower Longview Lake Limited Dredging	06/2018	Lake Preservation	\$347,740
Northshore Lake Dam	09/2017	Lake Preservation	\$4,091,722
<i>Total Under Construction</i>			<i>\$10,163,077</i>

<u>Projects Under Design</u>	<u>Estimated Completion</u>	<u>Type of Project</u>	<u>Budgeted Project Cost</u>
Beechwood-Cypress Neighborhood Area Improvements*	08/2018	Stormwater System Improvement	\$1,799,500
Brentwood Today Stream/Wetland Restoration*	05/2018	Lake Preservation	\$850,000
Brockton Drive Lake Phase II	06/2019	Lake Preservation	\$2,850,000
Juniper Street Drainage Improvement Project*	06/2018	Stormwater System Improvement	\$525,000
Lake Dam Road Bridge Replacement	05/2018	Bridge Construction (on Behalf of Transportation Department)	\$1,800,000
Laurel Hills Road Lake and Dam Spillway Rehabilitation*	08/2018	Lake Preservation	\$2,700,000
Lower Durant Dam/Spillway Reconstruction*	04/2018	Lake Preservation	\$30,000
Lower Longview Stream Stabilization*	03/2018	Stream Repair	\$255,893
North Ridge Phase IV	12/2019	Stormwater System Improvement	\$1,400,000
North Ridge Phase V	12/2019	Stormwater System Improvement	\$1,200,000
Ramblewood Drive Drainage Study	08/2019	Stormwater System Improvement	\$1,668,599
Sierra Drive Phase I	09/2018	Stormwater System Improvement	\$950,000
Simmons Branch Drainage Improvements Phase II*	01/2019	Stormwater System Improvement	\$4,200,000
Swann Street Phase I*	12/2018	Stormwater System Improvement	\$1,995,700
West Drewry Lane*	06/2018	Culvert Replacement	\$1,500,000
Western North Ridge Phase I	06/2019	Stormwater System Improvement	\$2,000,000
Western North Ridge Phase II	06/2021	Stormwater System Improvement	\$1,400,000
White Oak Lake Dam Reconstruction*	12/2018	Lake Preservation	\$2,835,000
Total Under Design			\$29,959,692

Over 50 percent of the CIP projects (*) under design in FY2017 will be bid for construction in FY2018 valuing \$15.8 million

2 – Drainage Assistance Program

In FY2017, the Commission approved nine projects (totaling \$1,337,500) through the Drainage Assistance Program that are fully funded by the Stormwater Utility under the program's new policy.

These projects will help alleviate severe stream bank erosion, repair the City's private storm drainage system, and reduce flood damages to structures on private property.



744 Catawba Street drainage assistance project completed in April

Newly Approved Projects	Date Approved	Type of Project	Total Cost	City Share
1501 & 1511 Dixie Trail	11/2016	Storm Drainage System Upgrade	\$105,000	Fully Funded
309/313/317 Gary Street	11/2016	Severe Erosion	\$33,500	Fully Funded
7104 & 7108 Hickory Nut Drive	05/2017	Storm Drainage System Upgrade	\$100,000	Fully Funded
Hollirose Place	11/2016	Structural Flooding	\$250,000	Fully Funded
2925 Rainford Court	08/2016	Structural Flooding	\$50,000	Fully Funded
5005/5009/5011 Rembert Drive	12/2016	Structural Flooding	\$79,000	Fully Funded
Spring Drive	08/2016	Storm Drainage System Upgrade	\$350,000	Fully Funded
Weldon Place	03/2017	Storm Drainage System Upgrade	\$250,000	Fully Funded
1209 Williamson Drive	08/2016	Severe Erosion	\$120,000	Fully Funded
Total Newly Approved			\$1,337,500	

Drainage Assistance Program projects completed in FY2017 include the following:

Projects Completed	Date Approved	Completed	Type of Project	Total Cost	City Share
1906 Aurora Drive	10/2011	01/2017	Severe Stream Erosion	\$41,524	\$36,524
744 Catawba Street	11/2010	04/2017	Severe Erosion/Bank Stabilization	\$114,646	\$109,646

6215 Chapel Hill Road	11/2011	10/2016	Structural Flooding	\$144,105	\$139,105
E. Davie Street	12/2015	06/2017	Structural Flooding/Pipe Replacement	\$164,053	\$159,053
1721 Hunting Ridge Road	10/2011	12/2016	Severe Stream Erosion	\$29,619	\$17,970
609 Northclift Drive	10/2014	02/2017	Failing Infrastructure/Pipe Replacement	\$79,410	\$75,010
North Hills Drive	07/2014	06/2017	Severe Stream Erosion	\$67,138	\$62,138
12801 Pegasi Way	11/2014	07/2016	Severe Erosion/Bank Stabilization	\$15,540	\$12,140
Pinehurst Drive/Astro Court	05/2016	06/2017	Failing Infrastructure	\$451,668	Fully Funded
4521/4523 Revere Drive	04/2015	02/2017	Failing Infrastructure/Pipe Replacement	\$77,558	\$69,558
612 Saver Court	04/2015	07/2016	Structural Flooding	\$11,704	\$8,904
206 Westridge Drive	11/2010	03/2017	Severe Erosion/Bank Stabilization	\$21,389	\$16,389
5009 Wickham Drive	05/2016	04/2017	Failing Infrastructure	\$45,610	\$40,610
Williamson Drive	08/2016	06/2017	Severe Erosion/Bank Stabilization	\$29,973	Fully Funded
4125 Windsor Place	05/2015	08/2016	Failing Infrastructure	\$12,653	Fully Funded
Total Completed				\$1,297,141	\$747,047

3 – Stormwater Quality Cost Share Program

In FY2017, the Commission reviewed and approved eight requests (*) from property owners for funding assistance (totaling \$310,500) through the Stormwater Quality Cost Share Program. That is nearly a 30 percent increase in participation from FY2016.

These projects help reduce the amount of pollution that enters Raleigh's waterways while serving as leading stormwater management practices that highlight the value in preserving and protecting water quality. Here is a list of Stormwater Quality Cost Share projects completed during the past year, as well as projects in progress as of June 30, 2017.



A rain garden capturing stormwater runoff at St. Ambrose Episcopal Church after a heavy rainstorm in April

<u>Projects Completed</u>	<u>Date Completed</u>	<u>Type of Project</u>	<u>Total Cost</u>	<u>City Share</u>
813 Darby Street*	04/2017	516-square foot Rain Garden	\$5,500	\$4,125
106 E. Drewry Lane*	06/2017	900-square foot Permeable Paver Driveway	\$8,990	\$6,512
2405 Fairview Road*	03/2017	3,400-gallon Below-ground Cistern	\$19,137	\$17,224
2909 Oneida Court	11/2016	1,050-gallon Above-ground Cistern	\$5,390	\$4,043
1201 Watauga Street*	04/2017	1,709-gallon Below-ground Cistern	\$12,647	\$10,023
Total Completed			\$51,664	\$41,927

<u>Projects Under Construction</u>	<u>Estimated Completion</u>	<u>Type of Project</u>	<u>Total Cost</u>	<u>City Share</u>
827 E. Hargett Street	TBD	550-gallon Above-ground Cistern	\$2,950	\$2,213
510 W. Martin Street (Raleigh Union Station)	10/2017	5,000-square foot Permeable Parking/Green roof with Cistern/Bioretenction Cell	\$426,470	\$290,000
316 Seawell Avenue*	10/2017	1,700-gallon Below-ground Cistern	\$7,000	\$6,480
2705 Talbot Court West	10/2017	1,150-square foot Permeable Paver Driveway	\$21,900	\$16,425
2909 Oneida Court*	10/2017	200-sqaure foot Rain Garden	\$4,476	\$3,357
Total Under Construction			\$462,796	\$318,475

<u>Projects Under Design</u>	<u>Estimated Completion</u>	<u>Type of Project</u>	<u>Total Cost</u>	<u>City Share</u>
7506 Falls of Neuse Road*	11/2017	2 Bioswales and 1 Bioretenction Cell	\$250,000	\$225,000
2521 Remington Road*	10/2017	1,300-sqaure foot Depaving	\$2,750	\$2,063
Total Under Design			\$252,750	\$227,063

4 – Flood Hazard Mitigation Program

With the continued support of the Commission, the Stormwater Program began the demolition of its Capital Inn property at 1625 Capital Boulevard in November 2016, which was acquired in FY2016 through the Federal Emergency Management Agency’s (FEMA) Hazard Mitigation Grant program. The program provides funding assistance to the City when it purchases and removes properties, like Capital Inn, that were built prior to current

development regulations and experience ongoing flooding. The Capital Inn property was purchased at no additional cost to the City as it was completely funded by state and federal grant money totaling \$1,160,000. Now, as natural green space that allows the floodplain to function more naturally, the property will see a reduction in flooding and increase in public safety. This project, along with the project of a neighboring floodprone property at 1801 Capital Boulevard (formerly Dunkin' Donuts) that is funded at \$317,000 through the Stormwater Utility, is nearly complete. Both projects coincide with the City's revitalization efforts for Capital Boulevard.

5 –Stormwater Program and Policy Updates

Over the course of FY2017, the Commission reviewed several stormwater policies and programs that are currently being implemented or are under further review:

- During several work sessions, the Commission provided insight on potential updates to the Stormwater Program's **Stormwater Utility Fee Crediting Program**, which offers monetary credits and adjustments to property owners who pay the stormwater utility fee and who put stormwater control measures, such as detention ponds, in place that go above and beyond the flood control standards set by the City. The Commission provided feedback on and supported the following staff recommendations to enhance the program:
 - Revising the cap on total available stormwater utility fee credits from 85 percent to 50 percent while also providing expanded crediting opportunities for customers that exceed development requirements;
 - Providing performance-based fee credits for both flood control and water quality control measures;
 - Providing credits to Stormwater Quality Cost Share Program participants following the completion of the maintenance agreement for their project;
 - Exploring future fee crediting options for Single-Family Residential (SFR) properties; and
 - Promoting and increasing public awareness of the updated program.

These fee crediting program enhancements along with an updated fee crediting manual will be presented to Raleigh City Council for consideration.

- In FY2016, the Commission reviewed policy changes to enhance services provided through the **Drainage Assistance Program**. Under the new policy, drainage assistance projects are completely funded rather than a shared cost between property owners and the City, permanent drainage easements are dedicated for all system repairs to ensure that completed projects are maintained properly, and program funding has increased from \$750,000 to \$1.25 million per year. These adjustments, along with a new bi-monthly project review cycle, have allowed the Stormwater Program to address more drainage concerns on private property by qualifying and completing more projects in FY2017. This level of service will continue with 27 projects valuing \$2.7 million projected for construction in FY2018.
- In November 2016, Raleigh City Council approved an amendment to the City's Unified Development Ordinance (UDO) that incorporates **stormwater regulation standards for smaller sites** undergoing development or redevelopment that were previously exempt. With this text change, development of previously exempt lots are required to provide an evaluation to determine how development will impact

stormwater downstream and identify the property's need for active stormwater control measures. Impacted development includes lots that are one acre or less and used for single family/duplex homes or properties that are less than half an acre and used for any other purpose that exceed new impervious area limits. This amendment ensures that these sites limit their impacts to receiving waterways and surrounding stormwater infrastructure. This text change (TC-2-16) was approved after the Commission provided final recommendation on impervious area exemption limitations in FY2016.

6 – Green Stormwater Infrastructure

The Commission continues to strongly support advancing the use of Green Stormwater Infrastructure (GSI) as a leading stormwater management practice for new development and redevelopment, City facilities, and street-improvement projects. GSI incorporates natural and constructed landscape features that mimic nature to allow rainwater to be absorbed and stored while removing pollutants that otherwise would go directly into streams and other waterways. This is especially important when natural plants and soils are removed during construction of impervious surfaces, like pavement and buildings, that do not allow water to soak into the ground, and therefore increase the amount of stormwater runoff and pollution that enters the storm drainage system. In FY2017, after supporting the formation of two GSI work groups, the Commission endorsed the work groups' recommended changes to the City's development code. These changes provide a framework for encouraging the development community to incorporate GSI practices into land development to offset environmental impacts to local waterways. Raleigh City Council approved the recommended text changes in September 2017. Moving forward, the Commission anticipates providing additional recommendations to Raleigh City Council as necessary to further support the implementation of GSI practices.

SMAC Mission Statement

The Stormwater Management Advisory Commission will manage resources sufficiently to protect the public infrastructure, quality of life, environment, and property of the citizens of Raleigh through fair and equitable cost effective means. SMAC recommendations will seek to improve, enhance, and protect the quality of the Neuse River and its tributaries.

[Raleigh City Council approved this report on October 17, 2017.]